

C L A I M S

1. Method to control a process, wherein the status of the process can be altered by a multitude of actions, wherein the action is controlled by basic control units, wherein at least one basic control unit is coordinated by at least one group control unit and wherein this basic control unit comprises the following functions:

(b1) means to receive and priority handle a request for a basic control action from one or more group control units or from the operator to be performed by said basic control unit, (b2) means to receive and transform information from the process and/or output from basic control unit(s) and/or output from group control unit(s) into a permit required to start or to continue to execute said action, (b3) means to receive lockouts from basic control unit(s) and/or from group control unit(s) and/or from the operator and/or from the basic control unit itself to prevent the start or to initiate the termination of said action and force the default status or shut-down sequence of the basic control unit until the received lockout(s) has (have) been removed and also a reset has been activated, (b4) means to process an internal lockout and/or export an output or lockout, which output/lockout is related to the status of said action and (b5) means to execute said required action according to a logic or sequence according to which the basic control unit operates, and wherein at least one of these group control unit comprises the following functions:



(g1) means to receive and priority handle a request for a group control action from an even higher hierarchy control unit or from the operator to be performed by said group control unit, (g2) means to receive and transform information from the process and/or from basic control unit(s) and/or from group control unit(s) into a permit required to start or to continue to execute said group action, (g3) means to receive lockouts from basic control unit(s) and/or from group control unit(s) and/or from the operator and/or from the group control unit itself to prevent the start or to initiate the termination of said action and force the default status or shut-down sequence of the group control unit until the received lockout(s) has (have) been removed and also a reset has been activated, (g4) means to process an internal lockout and/or export an output or lockout, which output/lockout is related to the status of said group action and (g5) means to execute said required group action according to a logic or sequence according to which the group control unit operates.

2. Method according to claim 1, wherein at least one basic control unit is coordinated by at least two different group control units.

3. Method according to any one of claims 1-2, wherein the basic control action is controlling Single Blocks or sequence controlling Double Block with Bleed (DBB), enabling/disabling control valves for Distributed Control System (DCS) functions or sequences controller actions.

4. Method according to any one of claims 1-3, wherein the basic control unit will also comprise means to alarm (b6).

5. Method according to claim 4, wherein the basic control unit will also comprise an alarm handling



procedure such an alarm is terminated when the request to run (b1) is terminated.

6. Method according to any one of claims 1-5, wherein the basic control unit will also comprise means (b7) to indicate the effect of the controlled action.

7. Method according to any one of claims 1-6, wherein the operator will have access to the status of a basic control unit and wherein the status will also provide information directed to autonomous local valve function validation by means of indicators.

8. Method according to any one of claims 1-7, wherein the controlled process is a gasification process in which synthesis gas is prepared by partial oxidation of a solid, liquid or gaseous (hydro) carbon containing feed.

9. Method according to claim 8, wherein a group control unit coordinates the start up and shut down sequence control with basic control units which control a (hydro) carbon feed, an oxygen feed, a purge feed and a (synthesis) gas routing.